# CSC 330 Assignment 3

**Chapter 7:**

Q1: Write a **recursive** boolean method named isMember. The method should accept two arguments: an array and a value. The method should return true if the value is found in the array, or false if the value is not found in the array. Demonstrate the method in a program.
Show 4 different test cases, with an array of at least 10 in length.
(2 cases when the value is found; and 2 cases when value is not found).
Estimated time: 1 hour.

Q2: Write a method that uses **recursion** to count the number of times a specific character occurs in an array of characters. Demonstrate the method in a program.
Show 4 different test cases, with an array of at least 20 in length.
Estimated time: 1 hour.

**Chapter 8:**

Q3 (Programming, 40 points):
Textbook Page 388, In Practice, 8.17
Please provide some test inputs.
Estimated time: 2 hours.

**Bonus Question**: extra credit will be awarded
Q4 (Programming, extra points):
Textbook Page 388, In Practice, 8.18
Please provide some test inputs.
Estimated time: 3 hours.

**Submission instructions:**
Please submit a paper copy and an electronic copy.

**Paper copy:**
- Please submit the paper copy at the beginning of the class.
- Provide (create) **test input data** to all programming questions, and capture the related outputs as screen captures (or output files).
- Print the program source code files, test input data and **the output screen captures (or output files)**. If no output screen capture (or output file) is submitted, it would be assumed that the related program does not compile. If the print-out is not readable, **no mark will be awarded**.
- Identify each assignment question by writing the question number at the top of each page.
- Add the following statement to the first page of your submission: "I have abided by the UNCG Academic Integrity Policy on this assignment". Please write your full name and sign next to the statement. If the statement or the signature is not found, **75% of the possible points will be deducted**.

**Electronic copy:**
- Please submit a **lastname_firstname_assignment03.zip** (or lastname_firstname_assignment01.rar) file through the Blackboard Digital Dropbox. This zip (or rar) file should contain all submission files.
- Put the answers of all written questions in a **lastname_firstname_assignment03.doc** file.
- For programming questions, you only need to submit the *.java files.
- Name each *.java file (and related java class) according to the question number (e.g. Q1_*.java).

**Grading guidelines (programming questions):**
Your programs will be judged on several criteria, which are shown below.
- Correctness (50%): Does the program compile correctly? Does the program do what it's supposed to do?
- Design (20%): Are operations broken down into classes and methods in a reasonable way?
- Style (10%): Is the program indented properly? Do variables have meaningful names?
- Robustness (10%): Does the program handle erroneous or unexpected input gracefully?
- Documentation (10%): Do all program files begin with a comment that identifies the author, the contents, and the compiler used for that particular file? Are all the classes, methods and data fields clearly documented? Are unclear parts of code documented?

A program that does not compile will get at most **50% of the possible points**.